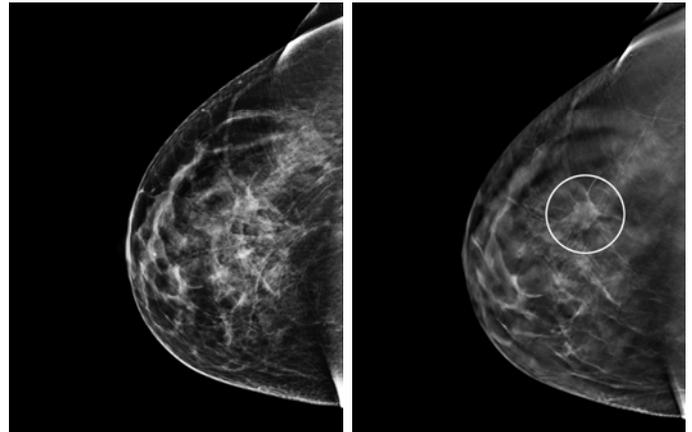


NEW DEVELOPMENTS IN BREAST CANCER SCREENING 3D MAMMOGRAPHY

The current standard of mammography is 2- dimensional (2D). Three dimensional (3D) mammography, or tomosynthesis, is achieved with breast compression with the imaging device moving in an arc around the breast taking multiple mammograms to obtain three-dimensional images which are computed together into a 3D image similar to a CT scan. The technology received FDA approval in 2011. The illustration shows a 2D digital mammogram on the left (A) and a 3D mammogram, converted to 2D on the right (B), which shows a clearer image.

A number of studies have validated the benefits of 3D mammography technology in screening: an increase in cancer detection rates by more than 40%, for invasive cancers in particular, and a significant reduction in unnecessary patient recalls and biopsies.

Although the benefits of 3D mammography far outweigh the perceived risks there has been concern about the increased dose of a combined conventional 2D and 3D mammography exam. While the radiation dose from the combined 2D and 3D exposure is within the U.S. guidelines for mammography there is now a low dose option which generates a 2D image from 3D mammogram image slices thereby eliminating the need for a separate 2D exposure.



A.

B.

Several studies have confirmed that the lower dose 3D mammography is similar to the widely utilized 2D digital mammography. Dr. Tamara Fulop, Chief of Breast Imaging at Mount Sinai Beth Israel and Mount Sinai St. Lukes' Hospital comments, "there is a twofold benefit to 3D over 2D mammography – both a reduction in the number of patients recalled for possible abnormalities and an increase in cancer detection rate by up to 20%."

Update on Breast Cancer Prevention

Breast cancer prevention, or "risk reduction" should be considered by women at significantly increased risk, in consultation with their doctor.

The major risk factors are: A strong family history of breast and/or ovarian cancer, particularly when the individual carries a mutation in the BRCA 1 or 2 genes. The BRCA genes account for 5-10% of all those with breast cancer in the US; about 85% of those with a strong family history, suggesting an inherited gene, have a BRCA gene mutation, but in 15% the gene or genes are not yet established, although a great deal of research is being carried out to find them. The main features of a strong family history consistent with a gene mutation are: multiple relatives with breast and/or ovarian cancer, breast cancer under 50 years old, bilateral breast cancer, breast cancer in different generations and breast cancer in Jewish women of Eastern European descent.

The options are surveillance with clinical examination, mammography, sonography (ultrasound) and, when indicated, breast MRI. It is anticipated that surveillance will allow for early diagnosis and higher cure rates. In conjunction with surveillance a risk reducing medication can be considered.

For premenopausal women over 35 years of age tamoxifen is used and for postmenopausal women raloxifene (Evista) can be used. These medications block estrogen from stimulating breast cells and reduce the chances of breast cancer by ~ 50%. For some women (such as Angelina Jolie) removal of both breasts, with immediate reconstruction, will reduce the chances of breast cancer by over 95%. This option is a very personal one and requires counseling by an experienced surgeon or one who has been trained in breast surgery, a genetic counselor and a psychologist. *continued on next page....*

THE USE OF ULTRASOUND WITH MAMMOGRAPHY

Screening mammography has its limitations and fails to detect breast cancer in about 10% of premenopausal women and about 20% of postmenopausal women. Annual mammograms detect 2-3 cancers per 1,000 women and ultrasound can identify a few additional cancers not seen on the mammogram particularly in women with dense breast tissue.

Approximately 40% of women have dense breast tissue which obscures cancer in half the women who have it. A large study by the American College of Radiology found that breast ultrasound can detect some cancers not detected by mammography. Digital mammography is recommended for women with dense breasts. Some States, including New York, Connecticut and New Jersey mandate that the report sent following a mammogram state whether the breast tissue is dense and suggests further discussion with their doctor.

Women with dense breast tissue should not worry and continue to have an annual digital mammogram. Additional ultrasound is an option and should be considered in context of the individual risk using a risk calculator such as the Tyrer-Cusik model which takes in to account many more factors than the commonly used Gail Model for calculating risk. A downside of breast ultrasound is that it can identify areas that are suspicious, but turn out to be harmless after a needle biopsy of the area in question. Breast ultrasound is less expensive than mammograms but may not be covered by insurance.

The decision to have breast ultrasound in conjunction with the mammogram requires discussion of your breast cancer risk, the benefits as well as the downside with your doctor.

Continued

Breast cancer risk can be reduced by exercise, limited alcohol intake, avoidance of Vitamin D deficiency amongst other lifestyle changes such as weight reduction when appropriate.

The ultimate goal is to reduce the risk of breast cancer by non-surgical means. Currently there are National Cancer Institute sponsored clinical trials being undertaken worldwide. The trials include hCG-A (an analog of human pituitary luteinizing hormone), metformin (used to lower blood glucose in Type II diabetics), prostaglandin inhibitors, statins, vitamin D, Mifepristone (a synthetic compound with both anti-progesterone properties, diindolylmethane (DIM is a synthetic derivative from a compound found in cruciferous vegetables), omega-3 fatty acids, curcumin (the principal component of the South Asian spice **turmeric**), olive oil and nutritional interventions.

The **Strang Cancer Prevention Cookbook** recipe using **turmeric** is in this Newsletter.

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Indian Spiced Vegetable Stew

Reduce Your Risk for Cancer by Eating a Healthy Diet!
Try this recipe with **Turmeric**.

The Strang Cancer Prevention Cookbook

4 servings—

Add chicken to make a protein rich meal

2 teaspoons olive oil.
1 medium red onion peeled and sliced.
4 small carrots, peeled and sliced 1/4 inch thick.
1/2 small jalapeno pepper, seeded & diced.
1 garlic clove, peeled and crushed.
1/4 teaspoon cumin seeds.
1 teaspoon curry powder.
1 teaspoon turmeric.
1 medium cauliflower, washed, core removed, and broken into medium-size florets.
2 medium white potatoes (preferably Yukon Gold), peeled and cut into 1 1/2 -inch cubes.
1 medium sweet potatoes peeled and cut into 1 1/2 inch cubes.
14 1/2 ounces canned stewed tomatoes.
1 cup canned chickpeas, drained.
1 cup frozen peas.



- Heat the olive oil in a heavy 4 -quart saucepan (preferably non stick).
- Add the onion, carrots, jalapeno, and garlic. Sauté over medium- high heat until the onion slices are limp, about 10 minutes.
- Add the cumin and spices, stirring for about 1 minute to combine and released their flavors.
- Add the cauliflower, white and sweet potatoes, stewed tomatoes, add 3/4 cup water.
- Season with salt and stir to combine all ingredients.
- Bring to a boil, then reduce the heat and simmer for 20 minutes, covered, until all the vegetables are tender but firm.
- Add the chickpeas and peas 2 to 3 minutes before serving and adjust the seasoning with salt if necessary.

Calories—262
Protein— 10 Gm
Carbohydrates—47 Gm
Fat— 4 Gm
Cholesterol—0 mg
Dietary fiber— 10 Gm
Saturated fat—0 Gm

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